Original Research Article

EVALUATION OF MEDICATION ADHERENCE AMONG HYPERTENSIVE PATIENTS ATTENDING CARDIOLOGY CLINIC IN A TERTIARY HEALTH FACILITY IN SOUTHERN NIGERIA

ABSTRACT

Background:High blood pressure (HBP) is considered one of the most challenging public health problems worldwide and reported as the leading risk factor for both cardiovascular death and hospitalization.If blood pressure is not properly controlled, it can cause complications such as: heart failure, stroke, renal disease, visual disturbances, sexual dysfunction, et cetera. Many people may not be aware of the state of their blood pressure.

Objectives: To assess treatment adherence amongst diagnosed hypertensive patients in cardiology clinic in a tertiary health facility.

Methodology: This was a cross-sectional study carried out among 126 patients for a period of 7months (April-November 2022) in the outpatient's cardiology clinic. The study employed a convenience sampling technique. Data was analyzed using IBM SPSS version 21.0 software. The Chi square test was used to check for association and the level of significance was set as $p < 0.05$.

Results: The majority of respondents, 125 (99.2%), were aware of hypertension, with most, 102 (81.0%), learning about it through hospitals. Majority of respondents 89(70.6%) had poor adherence opposed to 37(29.4%) who had good adherence.About 66(52.4%) take their medication as much as they can despite financial constraint. Also, mostrespondents 77(61.1%) good knowledge of the complications of hypertension as opposed to 49(38.9%).

Conclusion: In this study, it was noted that there was poor adherence to antihypertensive with a consideration number of participants forgetting their medication sometimes. It was clearly evident that respondents understood and experienced the side effects of hypertension.

Keywords*: Hypertension, Drug Adherence, Blood Pressure*

LIST OF ABBREVIATIONS

SBP: Systolic Blood Pressure
DBP: Diastolic Blood Pressure
JNC: Joint National Committee
mmHg: Millimeter of Mercury

INTRODUCTION

Hypertension, also known as elevated blood pressure, is a condition in which the blood vessels have persistently increased pressure[1]. It is defined when the systolic blood pressure (SBP) of 140 mmHg or more, or having a diastolic blood pressure (DBP) of 90 mmHg or more which warrants taking antihypertensive medication.

Hypertension can be primary or secondary. Primary hypertension can arise due to environmental factors, genetic influences, or a combination of both, making up 90-95% of adult cases. In contrast, secondary hypertension, which accounts for 2-10% of cases, has various causes which include renal, vascular, and endocrine disorders [2]. Hypertension is a significant medical condition that increases the danger of diseases affecting the heart, brain, kidneys, and other organs. It is a leading cause of premature death globally, affecting more than 1 in 4 men and 1 in 5 women, with over a billion people living with the condition [1].

The effect of hypertension is disproportionately higher in low- and middle-income countries, which account for two-thirds of cases, primarily due to the height gained in risk factors in these populations over recent decades [1]. In Nigeria, hypertension is among the most prevalent non-communicable diseases, affecting over 11% of the adult population in Africa's most populous nation. An increasing number of cases are being reported, particularly among those living in urban areas of the country [3]. Risk factors for hypertension include non-modifiable factors such as family history, aging, gender, and race, as well as modifiable factors like obesity, high salt intake, and a sedentary lifestyle [4].

The classification of BP for adults aged 18 years or older based on recommendations of the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) has been as follows [2]:

List 1 : Classification of BP for adults aged 18 years

NORMAL	Systolic lower than 120 mm Hg, diastolic lower than 80 mm Hg
PREHYPERTENSION	Systolic 120-139 mm Hg, diastolic 80-89 mm Hg
STAGE 1	Systolic 140-159 mm Hg, diastolic 90-99 mm Hg
STAGE 2	Systolic 160 mm Hg or greater, diastolic 100 mm Hg or greater

The management of hypertension involves the use of pharmacological, non-pharmacological, or a combination of both approaches. In a study, patients employed various practices to manage their condition, including dietary changes (61.6%), weight reduction (37%), and exercise (27.1%). These methods, along with pharmacological treatments, were shown to be highly effective in reducing blood pressure [5]. This maintains the need for patients to keep to treatment recommendations since in most cases control can be achieved.

Many people may not be aware of the state of their blood pressure. A general claim which points out that hypertension is often discovered incidentally when patients are screened, visiting the clinic for some other reason. Most of these patients in the first place had no symptoms, or did not relate the symptoms to the high blood pressure [6]. Hypertensive patients with poor adherence to their antihypertensive medication faced a 1.13 to 1.27 time's greater risk of stroke compared to those with high adherence [15]. A cohort study from Canada revealed that maintaining high adherence (MPR ≥80%) to antihypertensive medications reduced the risk of cerebrovascular disease by 22% compared to those with lower adherence. This underscores the importance of adherence to prescribed antihypertensive medications in significantly lowering the risk of future complications in patients with hypertension [16], which further emphasizes the need for follow up in the study of adherence to hypertensive medication.

The study sought to investigate the factors that influence treatment adherence as seen in a cross-sectional study was conducted at the Aga Khan University Hospital (AKUH) and National Institute of

Cardiovascular Diseases, Karachi, Parkistan. The study aimed at investigating the factors associated with adherence in the studied population and concluded that better awareness and increasing number of pills prescribed significantly improved adherence, while depression showed no association [17]. A based cross-sectional study was carried out on hypertensive patients at the Family Practice Clinic of a teaching hospital in Northern Nigeria revealed that adherence to antihypertensive medication and blood pressure control rates were 52.6% and 36.1% respectively. Independent predictors of adherence were religion, duration of taking medication. It was seen thatblood pressure control and family functionality were also associated with adherence to antihypertensive medication although the association was not statistically significant [18].

Thestudy sought to find out ways by which the individual, the healthcare provider and thecommunity at large can help to improve adherence to treatment. This way, from hypertension can be limited and the quality of life of the individuals can be improved. This creates the need for attention to be paid to this disease condition all over the world, as regards the health of individuals ranging from young to old.

2.0 METHODOLOGY

2.1 STUDY DESIGN

A descriptive cross-sectional study was employed for this research.

2.2 STUDY AREA

The study was be carried out in the cardiology department of Irrua Specialist Teaching Hospital located at Irrua (ISTH) – a tertiary health facility which has a staff strength of about 18 health care workers including doctors and nurses. The department attends to an average of 475 patients on a monthly basis.

2.3 STUDY POPULATION

The study participants were patients in attendance in the cardiology clinic.

2.4 STUDY DURATION

The study ran for about 7months from April to November, 2022.

2.5a INCLUSION CRITERIA.

- Consenting adults (male and female) attending the cardiology clinic

- Patients also managing hypertension with other comorbidities like Diabetes Miletus were also considered but with key focus on the hypertension.

2.5b EXCLUSION CRITERIA

- Those who were not present on the day of administration of questionnaire.
- Those with speech, hearing disability or difficulties with language comprehension, with no person available to translate what is being relayed to them.
- Patients who had complications of the disease on the clinic day and were admitted.

2.6 SAMPLE SIZE ESTIMATION

Sample size was estimated using Cochran's formula for cross sectional surveys

Sample size $n = \frac{Z^2Pq}{d^2}$ =……[14]

n= Sample size

Z = Standard normal deviation, set at 1.96 to correspond to 95% confidence interval.

P = Prevalence of condition under study taking from the highest value in the literature in previous studies.

q = 1-P

d = Error margin allowed from the study which is a measure of level of accuracy.

For this study;

Z = 1.96

P = 92% , that is 0.92 (prevalence value in the study on knowledge on hypertension in Sri lanka)[13] 23

d = 0.05

From the formula above $n = \frac{Z^2P(1-P)}{d^2}$

$n = \frac{(1.96)^2 \times 0.92 \times (1-0.92)}{(0.05)^2}$

$n = \frac{3.8416 \times 0.92 \times 0.08}{0.0025} = \frac{0.28274176}{0.0025}$

n =113.09, approximately 113

From the calculation above, the estimated sample size is 113.

sample size/1-non-response rate. 113/1-0.1=113/0.9 =125.5 app126

A total of 126 sample size was used for the study

2.7 SAMPLING TECHNIQUE

A convenience sampling technique was applied in this study.

2.8 STUDY INSTRUMENT

Questionnaire: a structured questionnaire was employed for the study, having obtained informed consent from the Hospital Research Committee and participants.

The questionnaire covered the following sections

Section A: Socio-Demographic Data

Section B: Assessment to Treatment Adherence Amongst Diagnosed Hypertensive Patients

Section C: Assessment of Factors That Influence Adherence to Treatment Amongst Diagnosed Hypertensive Patients

Section D: Assessment of Patients' Knowledge of Complications of Hypertension

2.9 RELIABITY AND VALIDITY OF MEASUREMENT OF DATA.

Face validity was obtained by giving a self-structuredmodified Likert scale questionnaire [22] to a senior researcher to scrutinize and modify before distribution.

2.10 PRETESTING

To ensure the reliability, the instrument was pretested among consenting adult participants at Usugbenu Primary health care Centre, Irrua who fit into the inclusion criteria. The first draft of

questionnaires was based on the literature review on the specific objectives. The questionnaire was administered to 10% of sample size which is 13 persons (7females and 6males) which revealed that not all respondents were aware of their blood pressure, only 8 persons were taking their medication and most of the participants complaining that had financial difficulty in getting their medication with affects adherence. The data collected was used to further design the standardized structured questionnaire.

2.11 DATA COLLECTION METHOD

Data was collected by use of interviewer administered questionnaire.

2.12 DATA ANALYSIS

Statistical test of association between proportions was done by the use of appropriate test of statistics using the Statistical Package for the Social Sciences (SPSS) version 21. Statistical level of significance was set at $p < 0.05$, construction of 95% confidence interval and odds ratio were done where applicable. Association between the dependent and independent variable were tested using Chi-square.

Data was analyzed using the descriptive statistical methods which wererepresented in frequency distribution tables, percentage and bar chart.

2.13 ETHICAL CONSIDERATION

2.13a Institutional consent

The consent for this research was sought from the department of Community Medicine Ambrose Alli University Ekpoma. Ethical approval for the study was sought from the Health Research Ethics committee and can be presented at any time when demanded.

2.13bIndividual consent

Both verbal and written informed consents were obtained from respondents before the questionnaires were administered. The purpose of the research was explained to the respondents as best as possible and they were made to understand that information gotten will be strictly confidential with information gotten stored in files and kept away from unauthorized access and soft copy stored in pass-worded laptops which will be available to only the researchers.

3.0 RESULTS

This chapter deals with the analysis of collected data and presentation of results with the use of percentage and frequency tables. The results were analyzed under the following sub-headings;

Table 1: Socio-demographic characteristics

Variable	Frequency	Percentage (%)
Age (in years)	**126**	
23-38	38	30.2
39-54	48	38.1
55-70	32	25.4
71-86	8	6.3
Mean Age ± Standard Deviation	**46.69 ± 14.37**	
Gender		
Male	64	50.8
Female	62	49.2
Religion		
Christian	91	72.2
Muslim	27	21.4
Others	8	6.3
Marital status		
Married	88	69.8
Engaged	5	4.0
Single	28	22.2
Divorced	5	4.0
Ethnic group		
Esan	54	55.2
Benin	33	26.2
Etsako	21	16.7
Yoruba	5	4.0
Hausa	6	4.8

Others	7	5.6
Level of education		
No formal	6	4.8
Primary	18	14.3
Secondary	28	22.2
Tertiary	74	58.7
Occupation		
Teacher	25	19.8
Nurse	13	10.3
Accountant	13	10.3
Clerk	10	7.9
Secretary	12	9.6
Orderly	31	24.6
Others	22	17.5
BP at presentation(mmHg)		
120/70-125/75	18	14.3*
130/80-135/85	47	37.3
140/90-145/95	30	23.8
150/100-155/105	15	11.9
>160/100	16	12.7
Height (m)		
1.39-1.89	51	40.5
1.90-2.40	10	7.9
2.41-2.91	29	23.0
2.92-3.42	27	21.4
>3.42	9	7.2
Mean Height ± Standard Deviation	**2.405 ± 0.703**	
Weight (kg)		
30-50	2	1.6

51-71	73	57.9
72-92	47	37.3
>92	4	3.2
Mean Weight ± Standard Deviation	**71.948 ±10.989**	
BMI(Kg/m^2)		
16-21	13	10.3
22-27	83	65.9
28-33	27	21.4
>33	3	2.4
Mean BMI ± Standard Deviation	**25.136 ± 4.479**	

From the Socio-demographic characteristics of the respondents in the study, the age group ranged between 23-86 years with majority in the age bracket of 39-54 with 48(38.1%). There were more males 64(50.8%) than females 62(49.2%). 91(72.2%) of the correspondents were Christian, Majority of the respondents 88(69.8%) were married, Esan by tribe 54(55.2%) with tertiary level of education 74(58.7%). Majority of respondents 25(19.8%) were teachers.

*Represents blood pressure of hypertensive patients that is normal at time of presentation indicating good control.

Table 2: **Medication adherence assessment**

Variable	Frequency(126)	Percentage (%)
Not take the antihypertensive for the past 2weeks.		
Yes	75	59.5
No	51	40.5
Stopped taking medication without telling the doctor		
Yes	53	42.1
No	73	57.9
Forgetting to take medications		
Yes	69	54.8
No	57	45.2
Do you take medication well you feel better		
Yes	80	63.5
No	46	36.5
Ever felt hassled about sticking to blood pressure treatment plan		
Yes	63	50.0
No	15	11.9
Sometimes	48	38.1
Difficulty remembering to take all blood pressure medication		
Often	41	32.5
Sometimes	49	38.9
Rarely	25	19.8
Not at all	11	8.7
Remember the names of your medication		
Yes	38	30.2
No	88	69.8

Majority of respondents 73(57.9%) have cut back or stopped taking your medication without telling their doctor because they felt worse when they took it, with most of them 80(63.5%) not taking their medication when they feel their blood pressure is under control.

Table 3: **Totalmedication adherence score**

Adherence Score	Frequency(390)	Percentage (%)
Good	37	29.4
Poor	89	70.6

Using a composite knowledge frame from SPSS, a score of 2 was given to good and a score of 1 was given to poor. Majority of respondents 89(70.6%) had poor adherence opposed to 37(29.4%) who had good adherence.

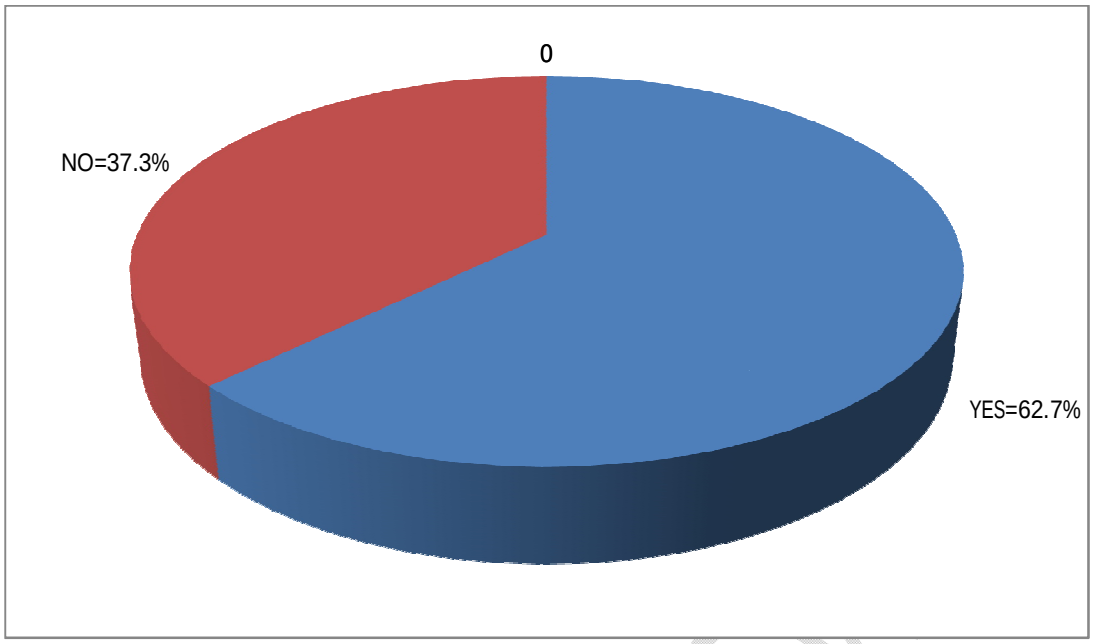

Figure 1: respondents that sometimes forget to take their medication

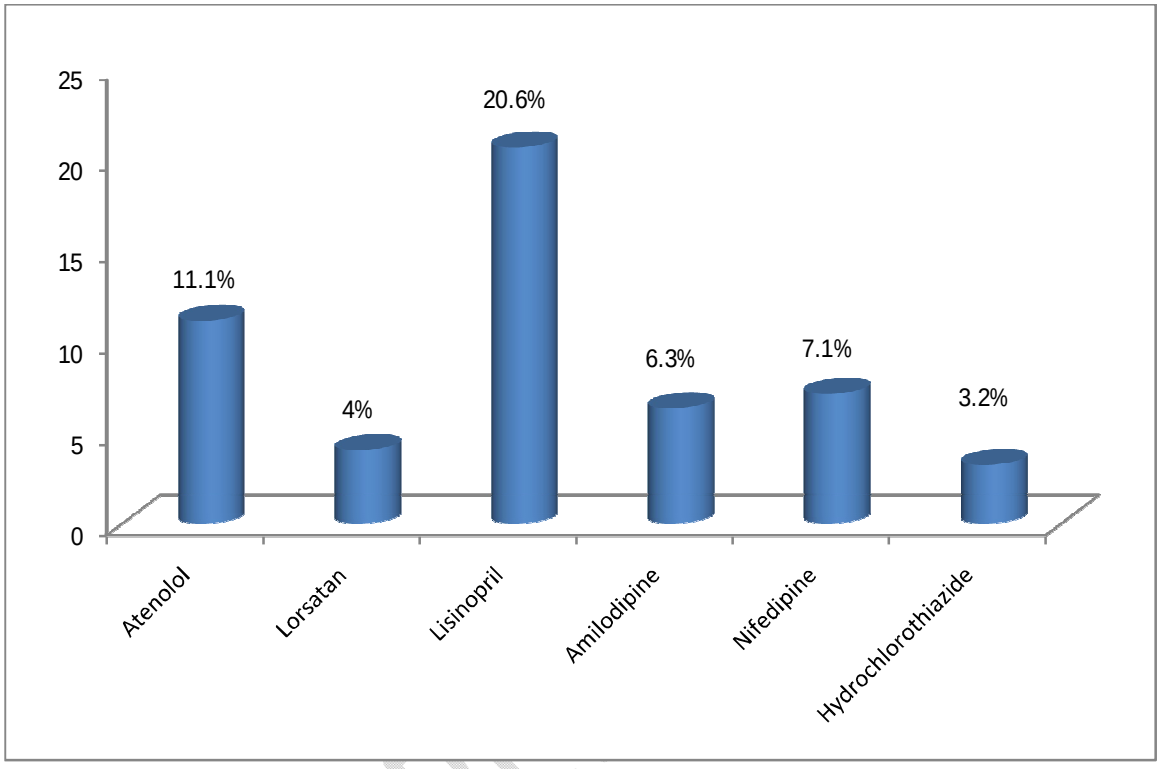

Figure 2: names of antihypertensive medications taken by respondents with Lisinopril 26(20.6%) having the highest.

Table 4: Barriers to adherence

Variable	Frequency (126)	Percentage (%)
Compliance to medication regularly		
Yes	66	52.4
No	60	47.6
If no, what reasons		
Financial constraints		
Yes	37	29.4
No	89	
I forget		
Yes	33	26.2
No	93	
I don't like drugs		
Yes	25	19.8

No	101	
I don't like the side effects		
Yes	25	29.8
No	101	
No access to health care provider		
Yes	7	5.6
No	119	
Not thinking that there is need		
Yes	12	9.5
No	114	
No insurance cover for drugs		1
Yes	2	1.6
No	124	
The drugs are too many		
Yes	27	21.4
No	99	
Not on any medications		
Yes	1	0.8
No	125	
I don't have high blood pressure		
Yes	1	0.8
No	125	

Majority of respondents 66(52.4%) take their medication regularly with financial constraint being the main reason why others do not 37(29.4%)

Table 5: Assessment of patient's knowledge of complication of hypertension

Variable	Frequency	Percentage (%)
Heard of hypertension		
Yes	125	99.2
No	1	0.8
If yes, where did you hear it from		
Social media	26	20.6
Friends	37	29.4
Health talk	52	41.3
medical outreach	57	45.2
Hospital	102	81.0
Are aware of any complication of antihypertensive medication		

Yes	117	92.9
No	9	7.1
If yes, what are they		
Dizziness	30	23.8
Headache	49	38.9
Kidney failure	56	44.4
Heart attack	64	50.8
Eye problem	63	50.0
Last B.P check		
Today	79	62.7
Yesterday	22	17.5
Last week	15	11.9
1-2months ago	4	3.2
4-6months ago	6	4.8
Regular B.P Check		
Most times	33	26.2
Sometimes	82	65.1
Not at all	11	8.7
Anyone in the family with hypertension		
Yes	70	55.6
No	56	44.4
If yes who		
Father	21	30.0
Mother	33	47.1
Brother	4	5.7
Grandparents	6	8.6
Others	6	8.6
Do you think hypertension is genetic		
Yes	78	63.4
No	45	36.6

Majority of respondents 125(99.2%) have heard of hypertension before with most of them 102(81.0%) hearing about it from hospitals. All respondents 126(100%) check their blood pressure with most of them 117(92.9%) on antihypertensive medications.

Table 6: **Totalknowledge score of the complications**

Complication Knowledge score	Frequency(390)	Percentage (%)
Good	77	61.1
Poor	49	38.9

Using a composite knowledge frame from SPSS, a score of 2 was given to good and a score of 1 was given to poor.Majority of respondents 77(61.1%) showed good knowledge of the complications of hypertension as opposed to 49(38.9%) who did not

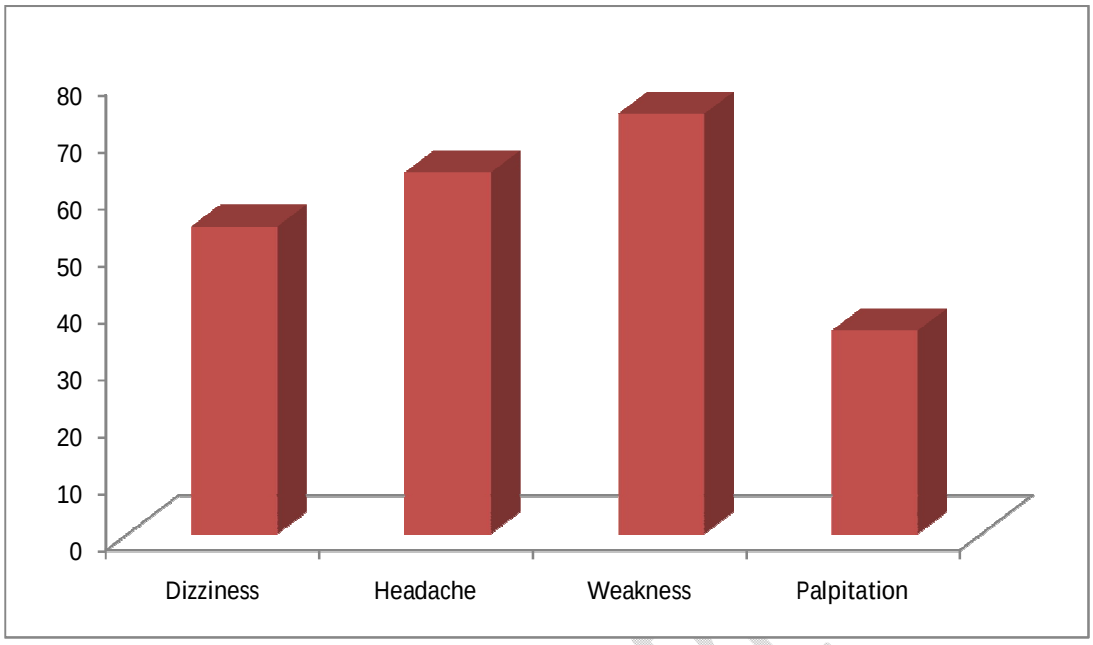

Figure 3.: shows the number of respondents the side effects of hypertension medications with most of the respondents 93(73.8%) choosing weakness as the most common side effects

Table : 7a Association between socio-demographic data and knowledge of hypertension

SOCIO-DEMOGRAPHIC DATA	**Variable**				
Age	**Knowledge of hypertension**		**Total**	**$\chi 2$**	**P_{val}**
	Good	Poor			
23-38	23	15	38	79.733	0.001*
39-54	30	18	48		
55-70	18	14	32		
71-86	6	2	8		
Total	77	49	126		
Gender					
Male	26	38	64		
Female	51	11	62		
Total	77	49	126	22.968	0.001*
Religion					
Christianity	59	32	91		
Islam	16	11	27		
Others	2	6	8		
Total	77	49	126		

Marital status				4.960	0.084
Married	54	34	88		
Engaged	5	0	5		
Single	16	12	28		
Divorced	2	3	5		
	77	49	126		
Ethnic group					
Esan	31	23	54	4.307	0.230
Benin	23	10	33		
Etsako	10	11	21		
Yoruba	2	3	5		
Hausa	5	1	6		
Igbo	5	1	6		
Others	1	0	1		
Total	77	49	126		
Level of education					
No formal	4	2	6	7.011	0.320
Primary	13	5	18		
Secondary	18	10	28		
Tertiary	42	32	74		
Total	77	49	126		
Occupation					
Teacher	13	12	25	1.722	0.632
Nurse	9	4	13		
Accountant	9	4	13		
Clerk	2	8	10		
Secretary	11	1	12		
Orderly	20	11	31		
Others	13	9	22		
Total	77	49	126		

Table:7b Association between socio-demographic data and knowledge of hypertension

Blood pressure at presentation(MMHG)	**Good**	**Poor**	**Total**	**χ2**	**Pvalue**
120/70-125/75	11	7	18		
130/80-135/85	20	17	47		
140/90-145/95	29	11	30		
150/100-155/105	6	9	15	35.280	0.026*
>160/100	11	5	16		
Total	77	49	126		
Height (m)					
1.39-1.89	36	15	51		
1.90-2.40	6	6	12		

2.41-2.91	19	7	26		
2.92-3.42	14	13	27	67.989	0.009*
>3.42	2	8	10		
Total	125	1	126		
Weight (kg)					
30-50	2	0	2		
51-71	43	30	73		
72-92	30	17	47	57.230	0.001*
>92	2	2	4		
BMI(Kg/m^2)					
16-21	8	5	13		
22-27	48	35	83		
28-33	18	9	27		
>33	3	0	3		
Total	77	49	126	84.774	0.001*

There was statistical significance between the Age, gender, Blood pressure at presentation, height, weight and BMI of respondents and knowledge of hypertension owing to the probability value obtained being less than 0.05.

Table 8: Association between barriers to adherence and knowledge of complication of hypertension

	Variable				
Compliance of medication	**Aware of complications of hypertension**		**Total**	**$\chi 2$**	**P_{val}**
Yes	41	25	66		
No	42	18	60		
Total	83	43	126	0.868	0.352

There was no statistical significance between barriers to adherence and knowledge of complication of hypertension, owing to the probability value obtained (0.352) being more than 0.05.

4.0 DISCUSSION

This survey yielded interesting findings regarding assessment of antihypertensive medication adherence among diagnosed hypertensive patients in cardiology clinic.

Respondents age group ranged between 23-86 years with majority in the age bracket of 39-54 with 48(38.1%). There were more males 64(50.8%) than females 62(49.2%). The data from this study indicated that the majority of respondents 79(62.7%) forget to take their antihypertensive medications sometimes. This was similar to a study done in India were most of the respondents 111(86.04%) often forgot to take their hypertension medication sometimes [11].This was in contrast with a study done in Nigeria were only 2(1.3%) forgot to take their medication [12].

It was observed that most respondents forget to take along their medications when they travel or leave their homes which was in tandem to a study done in India where most of the respondents 87(67.44%) sometimes miss taking their hypertension pills because they careless in taking along their medications [9].In another study reported in same India, it was reported that patients do not go for refill for medications or fill the need to see the physician because they presented with no signs or compliant [21].

Majority of respondents 80(63.5%) stop taking their medications sometimes when they feel their blood pressure is under control. This was in contrast with a study done in Saudi Arabia where only 13.4% of participants reported that they stopped taking their medication when they feel their blood pressure is under control [7].This was in contrast with a study done in Parkistan where most of the respondents 78(60.46%) do not miss taking their hypertensive pills when they feel better [8].

This study revealed that most of respondents 73(57.9%) cut back or stopped taking medication without telling their doctor because they felt worse when they took it as seen in a similar study done in Philippines were most of the respondents 74(57.36%) often decide to not take their medication without telling their doctor [9].However, in a study in Uganda it was noted that self-prescribed medication and lack of easy access to medication was a common practice [20].

Many respondents 66(52.4%) take their medications regularly, similar to a study done in Maiduguri where the adherence level was 85.5% [12]. It was also similar with a study done in Lagos were the adherence level was 67.6% [13]. This was however in contrast to a study done were only 42.2% of participants were adherent to antihypertensive medications as in Saudi Arabia [7]

Majority of respondents 117(92.9%) are on hypertensive medications and are aware of hypertensive complications 83(65.9%) with most of them identifying heart attack as the major complication of hypertension which is attributed to the fact that the participants have been diagnosed of hypertension and means of awareness highlighted in Table 5 had significant impact in recognizing these complications.This was in contrast to a study done in Nigeria were only 58.9% of respondents were aware of the possible complications of hypertension [11].Furthermore, study done in Algeria was in tandem with findings in this study as participants were also noted to display good knowledge of the complications of hypertension [19].

4.1RECOMMENDATION

1. Hypertensive medications should be made available for free or infact subsidized in pharmacies/hospitals by the government to enable mass usage
2. Creation of more awareness on the need for adherence to treatment by patients through advertisements and campaigns by the government through the Federal and State Ministry of Health
3. Establishment of programs in schools/ university and work places about hypertensive treatment adherence in order to reinforce the knowledge and perception about it.
4. Health workers should properly educate hypertensive patients about the benefits of treatment adherence at every clinic visit
5. Public Health campaigns and seminars should be held annually by health workers on the importance of treatment adherence

4.2 CONCLUSION

The data from this study indicated that although Majority of respondents 80(63.5%) do not take their medication when they feel their blood pressure is under control and cut back or stopped taking their medication without telling their doctor because they felt worse when they took it 73(57.9%), they still had a good adherence with most of them 101(80.2%) report taking their medication. Majority of respondents 66(52.4%) take their medication regularly as opposed to those who do not 47.6%, with financial constraint being the main reason. 65.9% are aware of hypertensive complications with majority of respondents 50.8% reporting heart attack as the major complication.

Ethical Approval:

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

Consent

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

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Details of the AI usage are given below:

1.

2.

3.

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APPENDIX 1

QUESTIONNAIRE.

SECTION A: SOCIODEMOGRAPHIC CHARACTERISTICS

- Age
- Sex: Male ( ) Female ( )
- Religion: Christian ( ) Muslim ( ) Others ( )
- Marital Status: Married ( ) Engaged ( ) Single ( ) Divorced ( )
- Ethnicity: Esan ( ) Bini( ) Etsako ( ) Yoruba ( ) Hausa ( ) Ibo ( ) Others ( )
- Level of Education: No formal education ( ) Primary ( ) Secondary ( ) Tertiary ( )
- Occupation: Teacher ( ) Lawyer ( ) Doctor ( ) Nurse ( )Engineer ( ) Accountant ( ) Clerk ( )
  Secretary ( ) Lecturer ( ) Orderly ( )
- Blood Pressure at presentation _____
- Height (m^2)_____
- Weight (Kg)_____
- BMI ?(Kg/m^2)_____

SECTION B: THE MEDICATION ADHERENCE SCALE

1. Do you sometimes forget to take your antihypertensive medication? YES ( ) NO ( )

2. Over the past 2 weeks, were there any days when you did not take your high blood pressure medicine? YES ( ) NO

If yes, PLEASE answer reasons in section D

3. Have you ever cut back or stopped taking your medication without telling your doctor because you felt worse when you took it? YES ( ) NO ( )

4. When you travel or leave home, do you sometimes forget to bring along your medications? YES ( ) NO ( )

5. Did you take your high blood pressure medicine yesterday? YES ( ) NO ( )

6. When you feel like your blood pressure is under control, do you sometimes stop taking your medicine? YES ( ) NO ( )

7. Taking medication everyday is a real inconvenience for some people. Do you ever feel hassled about sticking to your blood pressure treatment plan? YES ( ) NO ( ) SOMETIMES ( )

8. How often do you have difficulty remembering to take all your blood pressure medication? Often ( ) Sometimes ( ) Rarely ( ) Not at all ( )

9. Do you know the names of your medication? Yes ( ) No ( )

10. If yes, list them

a) _____

b) _____

c) _____

d) _____

SECTION C: BARRIERS TO ADHERENCE

- Do you take your medication regularly?. Yes (.). No(.)
- If no, what are your reasons?
  Financial constraints (.)
  I forget (.)
  I don't like drugs (.)
  I don't like the side effects (.)
  No access to health care provider (.)
  Not thinking that there is need (.)
  No insurance cover for drugs (.)
  The drugs are too many
  Other reason please state_____

SECTION D: ASSESSMENT OF PATIENT KNOWLEDGE OF COMPLICATION OF HYPERTENSION

1.0 Have you heard of hypertension before? Yes (.). No(.)

2.0 If yes, where did you hear it from?

Social media ( ) friends ( ) Health talk ( ) medical outreach ( ) Hospital ( )

3.0 Are you a known hypertensive? Yes (.) No (.)

4.0 Are you on any antihypertensive medication? Yes ( ) No (.)

5.0 Are you aware of complications of hypertension? Yes (.) No (.)

If yes, what are they:

Dizziness (.) Headache (.) Kidney failure (.) Heart attack (.) Eye problem (.)

Others please state_____

6.0 Have you ever had a B.P Check? Yes (.) No (.)

7.0 When last did you check your B.P? _____

8.0 How often do you check your B.P?

Most times (.) Sometimes (.) Not at all (.)

9.0 Do you know any young adult that has hypertension? Yes (.) No (.)

10.0 Do you know any young adult that has suffered complications of hypertension? Yes (.) No (.)

11.0 Anyone in the family with hypertension? Yes (.) No (.)

12.0 If yes who?

Father (.) Mother ( ) sister (.) Brother(.). Uncle (.) Aunty (.) Grandparents (.)

13.0 Do you think hypertension is genetic?

Yes (.) No (.)

14.0 What are the side effects of the hypertension medications

Headache ( )
Dizziness ( )
Vomiting ( )
Weakness ( )
Palpitation ( )

Others please state……..